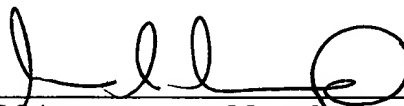


REMARKS

Typing errors in claim 1 are hereby corrected. Claims 21 - 25 are added to the existing claims. It is now believed that this application is in condition for examination. Early examination on the merits is respectfully requested.

Respectfully submitted,

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Enclosures

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231, on January 3, 2002.

  
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1. An antenna diversity system for receiving frequency-modulated (FM) radio signals in an FM receiver with the phase-controlled summation of antenna signals, for motor vehicles having a multi-antenna system (21) with antenna switches (5a, 5b...) coupled to antennas ( $A_1$ ,  $A_2 \dots A_N$ ) for producing at least two antenna output signals (23a, 23b), comprising:

a receiver (4) having a first input (31) and a second input (32) coupled respectively to the at least two antenna signals (23a, 23b);

a phase-shifter (33) having its input coupled to said second input (32) of said receiver (4), whereby the received antenna output signal (23b) at said second input (32) has the same phase at the output of said phase shifter (33) as the antenna signal (23a) in the first receiver input (31);

a summation circuit (35) for adding up the two received antenna signals (23a, 23b) in a phase-coincident manner, to produce at its output, an added-up signal (37), to be supplied to the frequency demodulator of the FM receiver;

a phase controller (34), having its input coupled to the output signal (37) of said summation circuit (35), and having its output coupled to said phase shifter (33), said controller (34)

having a low pass filter to limit its speed of shifting of said phase shifter (33);

an interference detector (18) having its input coupled to the output (37) of said summation circuit (35) for rapidly detecting a reception disturbance in said added-up signal (37) caused by a swing in the frequency of the received FM signals, so as to produce an interference detection signal (38) at the output of said detector (18); and

a controllable logic switch (11) having its output coupled to the antenna switches (5a, 5b...) of antenna system (21), and its ~~output~~input coupled to said interference detector (18) so that when a received signal (23a, 23b) that is different in terms of diversity, is supplied to at least one of said two inputs (31, 32) of said receiver (4) from each of the different switching positions of the antenna switches (5a, 5b...) detector (18) will actuate said logic switch (11) and thus switch antenna switches (5a, 5b...) to another switching position, during the presence of a reception disturbance ~~to another switching position~~ so that the output signal (37) fed to the FM demodulator is free of reception interference.